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TEACHER ADOPTION OF A NEW CONCEPT OF SUPERVISED PRACTICE IN AGRICULTURE.

BY- MILLER, TEXTON R.
NORTH CAROLINA UNIV., RALEIGH, N.C. STATE UNIV.

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A NEW CONCEPT OF SUPERVISED PRACTICE WAS INTRODUCED AT THE 1963 ANNUAL CONFERENCE OF NORTH CAROLINA AGRICULTURE TEACHERS. IT STATED THAT STUDENTS SHOULD BE ENCOURAGED TO SELECT THEIR SUPERVISED PRACTICE ACTIVITIES FROM THE BROAD FIELD OF AGRICULTURE RATHER THAN LIMIT IT TO PRODUCTION AGRICULTURE. THIS STUDY WAS EXPECTED TO (1) IDENTIFY THE LEVEL OF TEACHER ACCEPTANCE OF THE NEW CONCEPT AND (2) DETERMINE THE EXTENT TO WHICH CERTAIN PERSONNEL AND SITUATIONAL FACTORS WERE ASSOCIATED WITH TEACHERS' ADOPTION DATA WERE OBTAINED BY PERSONAL INTERVIEW OF 47 TEACHERS, A 10 PERCENT RANDOM REPRESENTATIVE SAMPLE OF 465 TEACHERS OF VOCATIONAL AGRICULTURE IN NORTH CAROLINA. THE PEARSON PRODUCT-MOMENT COEFFICIENT OF CORRELATION WAS USED TO DETERMINE THE RELATION OF FACTORS TO ADOPTION LEVEL. ADOPTION STAGES WERE CLASSIFIED AS (1) AWARENESS, (2) INTEREST, (3) EVALUATION, (4) TRIAL, AND (5) ADOPTION. AFTER 17 MONTHS, TWO-THIRDS OF THE TEACHERS HAD REACHED THE "EVALUATION" STAGE WITH HALF OF THESE READY TO BEGIN THE "TRIAL" STAGE. AN ADDITIONAL 17 PERCENT HAD REACHED ONE OF THE TOP TWO ADOPTION LEVELS. THE CONCLUSION WAS THAT TEACHERS HAD MADE REMARKABLE PROGRESS IN ADOPTING A NEW CONCEPT. IT WAS RECOMMENDED THAT FURTHER IMPLEMENTATION OF SUPERVISED PRACTICE BE ENCOURAGED BY GROUP DISCUSSIONS AND PILOT PROGRAMS RATHER THAN MASS MEDIA. (FS)

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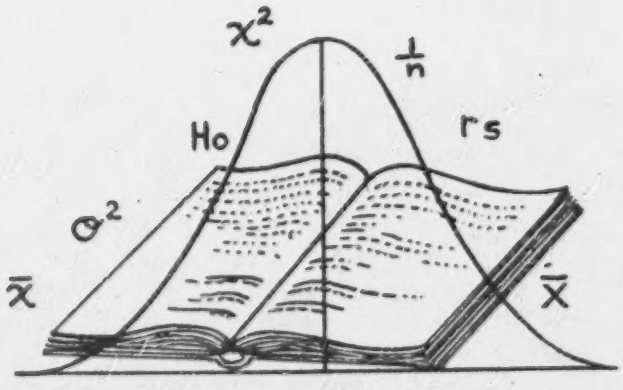

TEXTON R. MILLER

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Teacher Adoption of a New Concept Of Supervised Practice in Agriculture

Texton R. Miller

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A Report of Research
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AN ABSTRACT

Adoption-level theory was utilized to measure the progress of teachers of agriculture toward adoption of a new concept of supervised practice. After seventeen months two-thirds of the teachers had reached the "evaluation" stage of adoption with half of these ready to begin the "trial" stage. An additional 17 per cent had reached one of the top two adoption levels. A significant regional difference was observed in the adoption level of the overall concept and the third element, indicating that diffusion of it was less in the mountain region. Of ten variables tested for relationship to adoption-level, only "teaching practices" showed a moderate correlation. Factors of age, experience and overall attitude tended to correlate with adoption level, but not significantly. Tendencies toward negative correlation were noted between adoption level and size of school, student home opportunities for supervised practice and teacher attitude toward vocational education in general. Data was obtained by personal interview of 47 teachers, a random representative sample of 465 teachers of vocational agriculture in North Carolina. Because a majority of teachers were found at the "evaluation" adoption-level stage, it was recommended that further implementation be encouraged by means of group discussions and pilot programs rather than mass media.

Teacher Adoption of A New Concept Of Supervised Practice in Agriculture

An educational system must adapt continuously to the new needs and demands of society. For the most part educational change has come about slowly. However in such fields as mass communications, drug diffusion, and rural sociology the change process, or diffusion of innovation, has flowed faster. Today the field of education is channeling new and expanded efforts into the study of change and the diffusion process. This is the report of a study which focused on a new concept of "supervised practice" in vocational agriculture. The implementation of this concept was tested within an adoption-level theoretical framework. Basically this is a study of teacher adoption of a new concept.

A major responsibility of the teacher of agriculture is to provide relevant and effective learning experiences for high school students enrolled in agriculture. "Supervised practice" constitutes the approach by which student learning experiences are extended beyond the classroom and school hours to gain additional and more meaningful learning opportunities.

The New Concept. The new concept of supervised practice emphasized a modern definition of agriculture. It stated that students should be encouraged to select their supervised practice activities from the broad field of agriculture rather than be limited to production agriculture only. Second, the new concept asserted a responsibility

for the teacher and school to provide needed supervised practice opportunities at the school. Third, it insisted that every student have the opportunity to gain supervised practice in each major learning area in which he studies. This study was centered upon teacher adoption of these three elements of the new concept.

Purpose

The primary purpose of this study was to determine the relation of selected factors to teacher adoption of a new concept. The study was expected to (1) identify the level of teacher acceptance of the new concept and (2) to determine the extent to which certain personnel and situational factors were associated with teacher adoption. In addition this research was expected to help determine the value of two new instruments which have potential for research in broader fields.

Need

The new concept of supervised practice was officially introduced at the 1963 annual conference of North Carolina teachers of agriculture. Until this study, however, no objective evidence was available concerning the implementation of this concept by the teachers. It is important to teacher education and to state supervision to know the level and degree of acceptance in order to plan more effectively for preservice and in-service programs of education. Of equal importance is the knowledge of factors associated with the adoption of the concept.

Implementation Practices Important

The new concept of supervised practice was presented to the teachers in 1963 as a comprehensive program of teacher-led activities developed in cooperation with the school, students, students' employers, and students' parents. A number of recommended teacher practices and

procedures were included in the bulletin [1] expressing the concept. Thus. a part of this study was the determination of the acceptance by the teachers of these implementation practices, but they are treated in the analysis of data as one of several factors believed to be associated with the adoption of the new concept itself.

Method

This study was conducted through personal interviews by the researcher. A random representative sample of 465 teachers of agriculture was drawn. Using a table of random numbers, a 10 per cent sample was selected from the listing of teachers in the 1964-65 Directory for Agricultural Education. The sample was taken separately for each of the three recognized geographical regions of the state. A total of forty-seven teachers were interviewed and complete data were secured from all teachers.

Factors Studied

From the professional literature and the experience of the researcher and his co-workers, it was determined that the following factors would be tested for their relation to teacher acceptance of the new concept: (1) teacher age, educational level, and years of experience; (2) school size, location, and land laboratory facilities; (3) students' supervised practice opportunities at home; (4) teacher viewpoint of vocational education, vocational agriculture,

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(1) Improving Supervised Practice in Vocational Agriculture, State Department of Public Instruction, Bulletin No. 361, Raleigh, N. C., 1963.

and supervised practice; and (5) teacher acceptance of selected recommended teaching practices related to supervised practice.

Instruments Developed

Special instruments were developed to (1) determine the levels of acceptance of the new concept and the implementation practices, (2) to inventory attitudes of the teachers, and (3) to ascertain students' supervised practice opportunities at home. All instruments were reviewed by three former teachers of agriculture and given trial runs with two employed teachers of agriculture with only very slight modifications being made.*

Measuring the New Concept

Three key aspects of the new concept were expressed in the form of behavorial statements to secure a measure of policy action rather than philosophical acceptance only. The basic questions asked of teachers were: (1) May your students select their supervised practice activities from the broad field of agriculture rather than only from production agriculture? (2) Are your students provided opportunities for supervised practice at the school? (3) Are your students provided opportunities for supervised practice in each major learning area of the curriculum?

Adoption Process Theory

Adoption-process theory was the basis for the design of the two instruments developed for measuring teacher adoption level of the new concept and for assessing the acceptance of selected teaching practices. Recognized authorities contend that adoption of any practice is a process with identifiable stages generally classified as (1) aware-

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*Copies of instruments may be secured from the author.

ness, (2) interest, (3) evaluation, (4) trial, (5) adoption. This theory is important because researchers as Beal, Bohlen, and others have shown that the effectiveness of various communication media and change-agents varies with the stage of adoption of the practice by the recepient.(1) Knowledge of the level of adoption may assist change-agents in selecting the most appropriate means to encourage adoption of practice.

The above adoption-level stages were incorporated into the following seven-point scale which was used to identify the level of acceptance that teachers had reached for each of the three elements of the new concept.

Explanations of Scale

Score No. "1" This is new to me; I hadn't heard of it before.

Score No. "2" I've heard or read of this; but hadn't given it much thought.

Score No. "3" I am considering this idea; but haven't reached any conclusion on its value.

Score No. "4" I doubt that this practice would be of much value in my situation.

Score No. "5" This idea looks promising; but I haven't tried it yet.

Score No. "6" I am giving this a trial now on a temporary basis.

Score No. "7" I am using this regularly now.

It will be noted that scores "one" and "two" relate to awareness of the concept element under consideration, score "three" is equivalent to the "interest" stage, and scores "four" and "five" indicate that "evaluation" (either unfavorable or favorable) has been undertaken.

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(1) North Carolina Regional Publication No.1, Agricultural Extension Service, How Farm People Accept New Ideas, Special Report No. 15, Iowa State College, Ames, Iowa. November 1955.

Score number six locates a teacher in the "trial" stage of adoption, and a mark of "seven" denotes teacher adoption of the practice or policy. The teachers expressed no difficulty in utilizing this scale with its explanatory statements.

The above scale and statements were also used by the teachers to indicate their level of adoption of thirty-four selected teacher practices or procedures which constituted one of the factors studied for its relation to teacher acceptance of the new concept. Teachers were able to utilize this scale without apparent difficulty in interpreting the statements or in applying them to their perceived level of adoption of practice or principle.

Answers Sought

The report of this study is centered on answers to six basic questions listed here and discussed later in more detail:

Question
1. To what extent has this new concept been adopted?
2. Are there differences in adoption of concept according to geographic regions?
3. Are there regional differences in the adoption of any one of the three aspects of the concept?
4. Are there differences in adoption of concept by non-scheduled school time of the teacher?
5. Is the presence or absence of a school land laboratory associated with adoption level of concept?
6. To what extent is there a relationship between level of adoption and each of the following variables: (1) age, (2) level of academic degree, (3) years of experience, (4) size of high school enrollment, (5) teacher rating of students' home opportunities for supervised practice, (6) teacher attitudes, and (7) implementation practices.

PRESENTATION OF DATA

I. Adoption Level of New Concept

Teachers of agriculture in North Carolina have made considerable progress in adopting a new concept. Figure I reveals teacher acceptance of the new supervised practice concept as a whole. This graph is based upon the combined adoption scores for the three concept aspects measured in this study which were stated earlier as (a) a modern definition of agriculture, (b) provision for supervised practice opportunities at the school and (c) provision for supervised practice in each major learning area in which a student studies.

For a small number of teachers (10.6 per cent) the adoption of the concept was indicated as complete and firm. Combining the groups in the top two adoption level stages, some 17 per cent would be rated above the "evaluation" stages. Nearly two-thirds of the teachers can be seen in the "evaluation stages", and about half of these showed favorable views of the concept to the extent of anticipating trial of it.

Although none of the teachers could be considered unaware of the "total concept", about 20 per cent would classify only as high as the "interest" stage.

In view of the fact that only 17 months has passed since official sanction was given to the concept and the assumption that adoption of educational practice is a process of years rather than months, it would

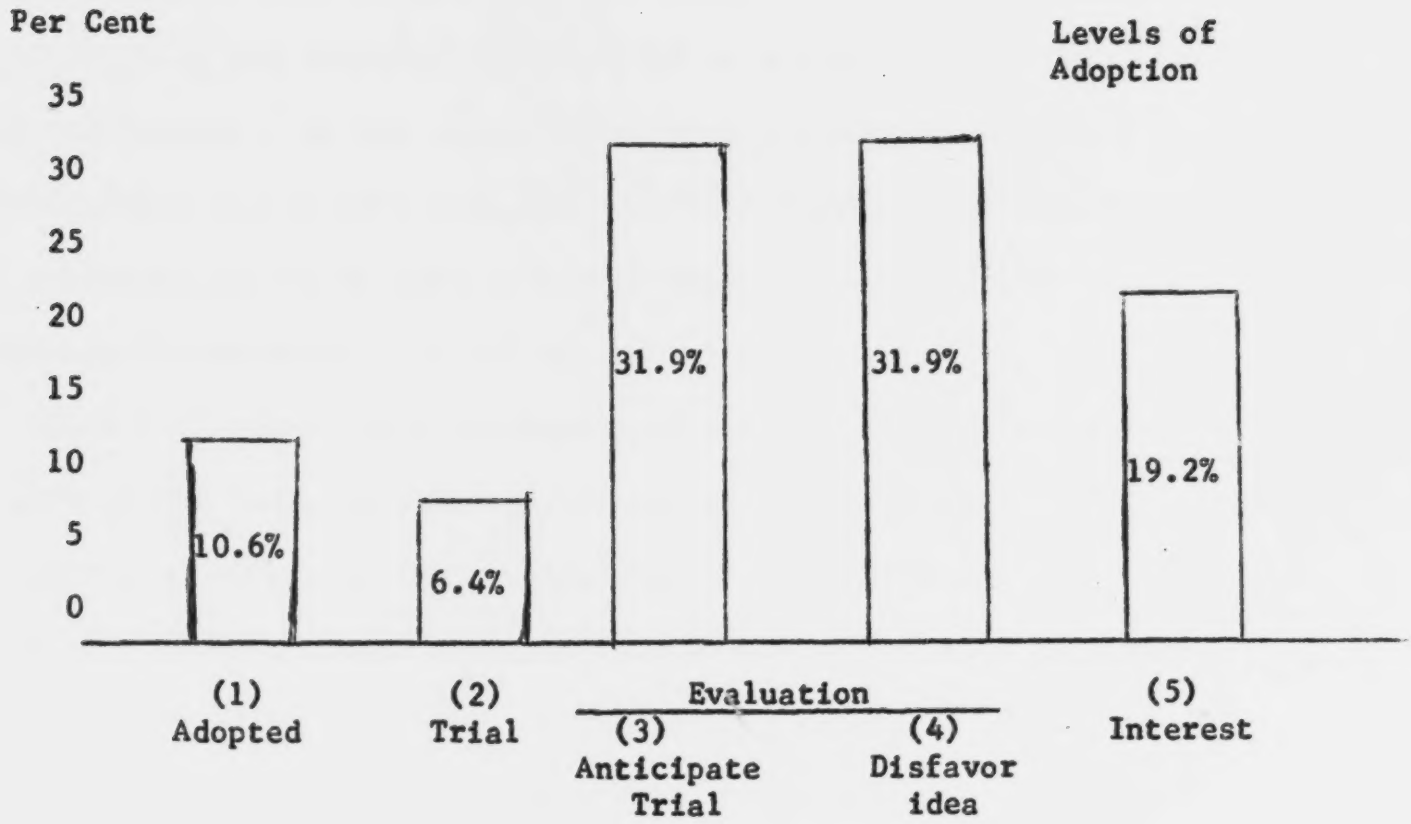

Figure 1. Percentage Distribution of Teachers by adoption levels reached in Acceptance of New concept

appear that teachers have made remarkable progress in adoption to date. However, it seems obvious that there is also a great deal of room for further progress since only 17 per cent have reached as far as the "trial" stage in the adoption of the total concept. Perhaps the most challenging statistic from Figure I is that indicating approximately 32 per cent of the teachers had declared an unfavorable reaction toward the concept. To the extent that these teachers have taken a firm position toward this concept, it will probably be more difficult for change-agents to be effective with them. See Appendix A for frequency distribution of teachers.

Table 1 provides the distribution of teachers by adoption level in each of the three concept aspects included in this study. Teachers are nearly unanimous in their acceptance of "aspect I" which basically involves a broad concept of agriculture as contrasted with only production agriculture (farming). Although this aspect is an essential element of the new concept and so stated in the official publication of the coneept, the high adoption level obtained is probably more a reflection of the general trend in all of agriculture to broaden its horizons, rather than an outgrowth of the introduction of the new concept. Nevertheless it could not be presumed prior to this study that teachers had implemented the new definition of agriculture in their approach to supervised practice. More specifically, it was not known whether teachers were permitting their students to select supervised practice activities from the broad field of agriculture rather than from farming only.

Table 1 Adoption of Three Aspects of New Supervised Practice Concept by Levels of Adoption

Adoption Level	Aspect I		Aspect II		Aspect III	
	No.	%	No.	%	No.	%
7	46	97.7	8	17.0	8	17.0
6	0	0	2	4.2	2	4.2
5	1	2.3	14	29.8	7	14.9
4	0	0	7	14.9	2	14.2
3	0	0	7	14.9	6	12.8
2	0	0	9	19.2	8	17.0
1	0	0	0	0.0	14	29.9
Totals	47	100	47	100.0	47	100.0

Aspect 1. Students may select supervised practice programs from the broad field of Agriculture, rather than only from production agriculture (farming).

Aspect 2. Students have opportunities for Supervised Practice at the school (beyond class and shop).

Aspect 3. Students are provided opportunities to gain supervised practice in each major learning area (such as animal science) in which they study.

Aspect II of the concept concerns the policy of providing opportunities at the school, beyond class and shop facilities, for supervised practice by students. The new concept emphasized a responsibility of the school and teacher to provide supervised practice opportunities at the school. Currently the enrollments of students in vo-ag include increasing numbers of students without adequate supervised practice opportunities at home. Assuming these students have a genuine interest in agriculture, it is logical that the school accept a responsibility for providing facilities for some supervised practiee at the school.

The measure of the acceptance of aspect II is shown in Table 1. About 21 per cent of the teachers had reached the trial stage, or higher (levels 6 and 7) in the adoption level, but almost an equal proportion (19.2 per cent) had not progressed beyond the "awareness" stage. Nearly 45 per cent of the group (levels 4 and 5) were declared in the "evaluation" stages with two-thirds of them ravoring the idea expressed in Aspect II. This would seem to be a favorable sign of the future acceptance of the aspect. However, the data also show that more than one-third of the teachers indicated only an "awareness" or "interest" in the concept (levels 2 and 3) at the time of the study.

Aspect III of the new supervised practice concept supposes that students are provided opportunities to gain supervised practice in each major learning area in which they study. By definition supervised practice consists of "learning experiences" "related to instruction."(2)

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(2) Improving Supervised Practice in Vocational Agriculture, State Department of Public Instruction, Bulletin No. 361, Raleigh, N. C., 1963.

It is assumed that each major learning area is of sufficient scope to necessitate provision of "learning experiences" beyond the normal class and shop facilities, and it is these which are identified as supervised practice.

Again from Table 1, the data show that nearly 60 per cent of the teachers (levels 1, 2, and 3) had not progressed beyond the interest stage for aspect III. Moreover, about 30 per cent of the teachers (by far the largest percentage of respondents in any one level of adoption) indicated they were not even "aware" of this aspect of the concept. The most obvious implication is that teachers were inadequately oriented to this aspect of the new concept. However an item analysis of the teacher-attitude instrument indicates that teachers were "aware" of the above aspect of the concept. On the attitude inventory 70 per cent of the teachers "agreed" or "strongly agreed" with this statement: "Supervised practice opportunities need to be provided for each major learning area in which the student studies."

Respondents	Strongly Agree or Agree	U	Disagree	Total
Number	33	5	9	47
Percentage	70	11	19	100%

Since these viewpoints were recorded prior to teachers answers concerning "provision for supervised practice opportunities in every major learning area", it would seem that teacher perception of "awareness" of the concept is being affected by some unknown factors.

To further support the above supposition, a more detailed study of the data from the attitude inventory item quoted above shows that fifty percent of those respondents indicating "unawareness of the third element of the concept" were in the group indicating agreement

or strong agreement with the attitude inventory concerning the need for the same element.

The inconsistancy of expressed attitude with the indicated adoption level of "unawareness" might imply that a comprehensive supervised practice program (such as would provide student opportunities in each major learning area of the curriculum) is theoretically acceptable to teachers but unrealistic to them at this time. In such a case, effective communication with teachers on this element of the concept will be a complex problem requiring more sophisticated approaches than ordinary mass communications. Techniques such as group discussions and study groups would seem to be in order.

Continuing with Table 1, approximately 30 per cent of the men had reached the decision-making stage concerning aspect III with about half of these teachers favoring the idea of providing opportunities for supervised practice in each major learning area of the curriculum. Also, 17 per cent of the recipients had reached the final stage of adoption, and this is equal to those adopting aspect II.

In summary: (1) Teachers were nearly unanimous in adopting the first proposition that students may select supervised practice activities from non-farm agricultural occupations as well as from farming; (2) More than one-half of the teachers had reached or surpassed the adoption level favoring trials of providing supervised practice opportunities at their school; (3) Nearly a third of the teachers professed ignorance of the concept of arranging supervised practice opportunities for each major learning area, and almost 60 per cent (levels 1, 2, and 3) of the group had not gone beyond the "interest" stage of the adoption level process in regard to this aspect of the new supervised practice concept. These observations suggest that most teachers recognize the new concept although they did not activate it.

II. Regional Differences in Adoption of Overall Supervised Practice Concept

This study was designed to permit analysis of data by geographical regions. The question to be answered is: "Were there regional differences in adoption of the overall new supervised practice concept?"

Table 2 shows the sample divided into "high" and "low" groups, in relation to mean score, and subdivided by regions. These data indicate no significant difference in adoption levels between coastal and piedmont teachers. However, it should be noted that the majority (82 per cent) of the teachers from the mountain region were below the mean score of the study group. The "t" test of significance indicates that the differences obtained in the level of adoption of the overall concept between teachers in the mountain region versus teachers in the coastal plains region was significant beyond the .05 level. These data indicate that the concept was less widely diffused in the mountains than in other areas.

III. Regional Differences in Adoption Level of Single Elements of the Concept

The question to be answered here is: "Were there regional differences in adoption of any one of the three elements of the supervisedd practice concept?"

Referring back to table 1, it may be noted that because of the concensus accorded aspect I of the concept, there can be no significant differences by region on this element.

In the case of aspect II concerning the provision of supervised practice opportunities at the school, the "t" test was applied and yielded no significant differences in adoption level between regions.

Table 2 Geographical Distribution of Teachers in Two Adoption Level Groups of the New Supervised Practice Concept

Adoption Level	Coast (Region I)		Piedmont (Region II)		Mountains (Region III)		Totals	
	No.	%	No.	%	No.	%	No.	%
High (15-21)[1]	11	58	9	53	2	18*	22	47
Low (10-14)[2]	8	42	8	47	9	82*	25	53
Totals	19	100	17	100	11	100	47	100

Mean = 14.6 *Significant "t" value for Region I and III = 2.08

"t" value for Region II and III = 1.59

"t" value for Region I and II = .50

1. Teachers totaling a score of 15 or more of a possible 21 were classified as high adopters.
2. All teacher scores totaled 10 to 14 of possible 20.
3. Dividing line between two groups arbitrarily set at 15 to provide most nearly balanced groups numerically.

However, on Aspect III concerning provision of supervised practice opportunities for each major learning area, it was determined by the "t" test that teachers of the coastal plains region reached a significantly higher level of adoption than did the teachers in the mountain area. No such significant difference was obtained in comparing the coastal group with the piedmont teachers, nor the piedmont teachers with the mountain teachers.

IV. Adoption of Concept by Non-scheduled School Time

A question considered in this study was whether a relationship existed between teacher adoption level of the new supervised practice concept and the amount of school-day time not scheduled for teaching classes. Many teachers of agriculture teach only four or five classes of high school students and many utilize the remaining one or two class periods for other aspects of the total vocational agriculture program. It may be assumed that some portion of this unscheduled time might be used for development of the supervised practice program.

No significant differences in acceptance level of the new supervised practice concept were found in comparing three subgroups of the teachers based upon 10, 5, or zero hours of non-scheduled school time. This is contrary to what might be expected since supervised practice is a teacher-led activity that naturally requires time beyond the classroom schedule for the development and supervision of student programs. Further exploration seems indicated to determine what use is made of the non-scheduled school time of the teacher of agriculture. An earlier study by J. R. Clary (2) indicated that there was also no clear relationship between "non-scheduled" time of teachers and the

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(2) Clary, J. R., Attitudes of Public School Personnel Toward Adult Education in Agriculture in North Carolina. Problem Option, Master of Ag Ed., 1960, North Carolina State College. 72 p. Raleigh, N. C.

scope of adult education programs developed. A third major responsibility of the teacher, the youth organization, has not been studied to determine whether non-scheduled school time of teachers is associated with its development.

V. Relationship of Adoption of Concept to School Land-Laboratory

The school land-laboratory is an accepted means of providing realistic learning experiences for students of agriculture. Not all schools possess the facilities and land needed in establishing a land-laboratory. The availability of such facilities should encourage the acceptance of the new concept of supervised practice, one element of which specifically refers to the opportunities provided by the school for supervised practice. In contrast to what might have been expected, there was practically no relationship between the level of acceptance of the supervised practice concept and the availability of a school land-laboratory. The "t" test value of .43 revealed no significant difference.

Some insight into the reasons for the lack of relationship indicated above might be gleaned from Table 1 which indicates that only 21 per cent of the teachers have reached the "trial" stage in the adoption of that element of the concept (No. 3) pertaining to the land-laboratory. It would be at the "trial" stage, or above, when the presence or absence of the land laboratory should be most crucial in the adoption of this means of providing supervised practice opportunities.

VI. Relationships of Selected Variables and Level of Adoption of Concept

The following selected factors were conceived to be of sufficient importance to determine whether a relationship existed between any one of them and teacher level of adoption of the new concept:

1. Age of teacher
2. Academic degree held by teacher
3. Years of teaching experience
4. Size of high school student enrollment
5. Opportunities at home for students to develop desirable supervised practice programs
6. Teacher attitude toward programs of vocational education in general
7. Teacher attitude toward the program of vocational agriculture
8. Teacher attitude toward supervised practice
9. Attitude - combined score of factors numbered 6, 7, and 8 above
10. Teacher acceptance of recommended teaching practices for development of student supervised practice programs

For all factors except one, the Person product-moment coefficient of correlation was used to determine relationships of factors to adoption level of supervised practice concept. In the case of the factor of college degree held by teachers, the point biserial correlation was used to assess relationship with adoption.

Since this report is addressed primarily to teachers of agriculture and public school administrators, they may be interested to note here certain limitations and precautions concerning interpretations of coefficients of correlations shown in the following tables:

(1) One of the most important uses of a coefficient of correlation is that of indicating the extent to which values of one variable may be predicted from known values of another variable. Yet an arbitrary ranking of correlations as "high", "moderate" or "low" is open to serious question, since the size of the correlation can scarcely be considered apart from the purpose for which it was computed.

In the case of this study, some of the low correlations (under .400) may be helpful in generalizing about the teachers of North Carolina as a group, but worthless in predictions concerning individual teachers.

(2) The coefficient of correlation cannot be interpreted as a percentage of perfect relationships existing between two variables or as a percentage of accuracy with which one variable may be predicted from another.

(3) The coefficient of correlation does not indicate a cause and effect relationship; it merely constitutes a measure of relationship between two variables or factors.(1)

In general it may be stated that of the ten variables studied for relationship to the teachers' acceptance of the new supervised practice concept, only one, that concerning teaching practices, showed a correlation which some statisticians would classify as "moderate correlation".

PERSONNEL FACTORS

The first three factors listed above of age, academic degree and teaching experience are usually included in a study of this type on the general basis that knowledge concerning these will be significant in tayloring educational programs to meet needs of selected groups as well as individual needs. Figure 2 shows the relationship of these factors to teacher adoption level of the new concept. Although the degree of correlation is much too low to be significant it is interesting to note that the direction of correlation is positive between all three variables (increasing age, experience, and professional degree) and the level of adoption of the new concept by the teachers.

One might have expected significant negative correlation between age, and teaching experience and adoption level reached. However, this study is one of teachers with a high educational level and above average incentives and opportunities for continuing education, all of which should promote receptivity to desirable educational change.

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(1) Wert, Neidtand Ahmann, Statistical Methods in Educational and Psychological Research. Appleton-Century-Crafts, Inc., 1954, New York, p. 76, 77.

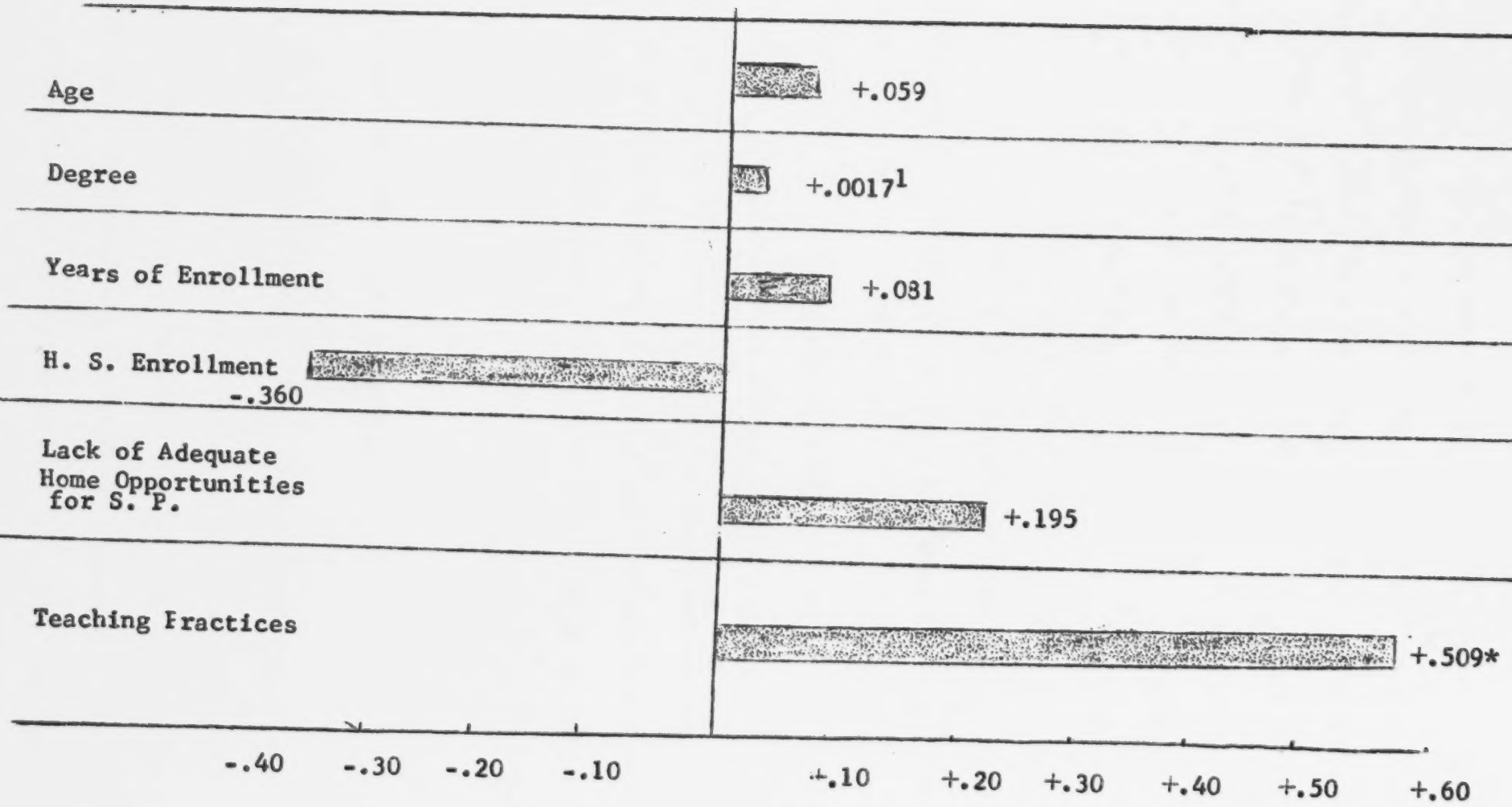

Figure 2 Correlations Between Selected Factors and Teacher Adoption Level of New Concept

(1) (point biseral correlation)

* significant at the 5 per cent level of probability

SIZE OF HIGH SCHOOL AND ADOPTION OF CONCEPT

It is also interesting to note from Figure 2 that teachers in the larger schools tended to show a lower acceptance level of the new concept. The data show a negative correlation between size of high school enrollment and level of teacher adoption of the new concept. One could rationalize that an opposite relationship should exist since the larger schools probably have more students from urban or rural-urban communities than from the rural areas, with greater need for help in gaining supervised practice opportunities. Further, the larger schools should have greater potential for offering supervised practice opportunities at the school--as it is proposed in the new concept. On the other hand, a large school could be overloading its teacher(s) of agriculture with high school students to the extent that an effective effort at developing supervised practice programs is unrealistic to the teacher. Perhaps the larger schools are more academically oriented and this might account for lower emphasis upon supervised practice. Additional study seems warrented on this point of the study since the correlation of .360 is approaching statistical significanee.

HOME OPPORTUNITIES OF STUDENTS

It was hypothesized that a lack of home opportunities of students for obtaining desirable supervised practice opportunities would relate positively with adoption level of the new concept of supervised practice. To determine the kind of home opportunities available to students, the teachers were asked to rate the home situations of

their sophomore students. Sophomores were chosen because of the greater number of enrollees in the ninth and tenth grade classes and because the teacher would probably be better acquainted with the home situations of sophomores. The average student score was computed for each school and correlations with teacher adoption levels of the new concept were determined.

Looking at Figure 2 again, it can be seen that there was a tendency toward correlation of .195 (not significant) between teacher adoption level and the lack of adequate student home opportunities for supervised practice. In other words, those teachers who rated low the home opportunities of their students for supervised practice tended to greater acceptance of the new concept of supervised practice.

TEACHING PRACTICES AS A VARIABLE

It was anticipated that the degree of use of certain teaching procedures would be related to teacher adoption level of the new concept. For this study there were thirty-four teaching practices selected from the North Carolina bulletin on supervised practice.

Figure 2 indicates a positive significant correlation between the teacher total score on teaching practices and teacher adoption level of the new concept. This relationship between practices used and acceptance of concept should encourage the use of this practice list in educational programs. Discussion of these specific practices, as well as the development of others, should be an aid in helping teachers implement the new concept.

TEACHER ATTITUDES

It is generally recognized that attitudes of people are important factors in determining behavior. Ramseyer has expressed this quite definitely in this statement:

> The writers of antiquity remind us "that as a man thinks, so is he." The way a man regards what he knows, the concepts he holds, and his attitudes toward himself and his associates are forceful determinents of his behavior.[1]

A special instrument was developed to gain a measure of the teachers attitude toward supervised practice as a element in the program of vocational agriculture, toward vocational agriculture as an educational program and toward vocational education in general.

The total of thirty-four statements devised were divided nearly equally among the three aspects of the attitude inventory with a balance of positive and negative items included to provide some internal consistancy. The Liker-type scale was adopted to provide a five point classification of responses from "strongly agree" to "strongly disagree."

Table 3 shows the correlations found between teachers' attitudes and the six factors of (1) teacher age, (2) teaching experience, (3) size of high school enrollment, (4) supervised practice opportunities at student homes, (5) teaching practices, and (6) teacher acceptance of the new concept.

None of the correlations shown in Talbe 3 are of sufficient size to establish a relationship between teacher attitude and any of the six factors considered. It is however of interest to note the variation of direction of correlation indicated by the data.

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[1] Ramseyer, John A., et. al., Factors Affecting Educational Administration, (School Community Development Series Monograph No.2, Columbus: The Ohio University Press, 1955), p. 67.

The "combined score" on teacher attitudes is a summation of the scores of the three parts of the attitude inventory. In table 3, this combined attitude score shows a tendency to correlate negatively with each of the three factors of teacher. age, years of teaching, and size of high school enrollment. This is to say that older teachers, more experienced teachers, and teachers in the larger schools tended show the least favorable overall attitude on the inventory items. However the opposite condition existed concerning the other three factors, columns 4, 5, 6, in table 3. Herein the more favorable attitude scores were shown by teachers with students having less desirable home opportunities for supervised practice, by teachers scoring higher in use of recommended teaching practices, and by teachers showing greater acceptance of the new concept.

Further notice of Table 3 shows that the expressed attitude toward supervised practice, per se, (line 1) follows the tendency of the overall attitude score, e.g., to show negative correlation with age, experience, and size of high school; but positive correlation with the other three factors (columns 4, 5,6). Only in the case of "attitude toward Vo. Ag." versus "years of experience" is there any tendency to show a relationship of positive correlation, between teachers attitudes and the factors of age, experience, or size of school.

In column 4 of Table 3, attitude toward Vo. Ag. is paired with supervised practice opportunities of students. The negative correlation figure of -.037, although not significant, suggests that teachers with the stronger positive attitudes toward the Vo Ag program have students with more desirable supervised practice opportunities at home.

Table 3 Correlations Between Teacher Attitudes and Selected Factors

Attitudes of Teachers	(1) Age yrs.	(2) Exp. yrs.	(3) H.S. Enroll.	(4) Poor Home S.P. Opport.	(5) Teaching Practices	(6) Adoption Levels of New Concept
Toward Supervised Practice	-.288	-.244	-.266	+.138	+.098	+.205
Toward Vo Ag	-.107	+.003	-.177	-.037	+.187	+.054
Toward Vo. Ed.	-.219	-.194	-.155	+.319	+.068	-.113
Combined Score on Attitudes	-.224	-.146	-.248	+.186	+.164	+.049

It may also be noted from Table 3, column six, that attitude toward the Vo Ag program is positively correlated with adoption level of the new concept; but the attitude toward vocational education is just the opposite, being negatively correlated with acceptance of the new concept. It would seem that these teachers do not relate the values they hold for vocational agriculture to the parent field of vocational education. It suggests a lack of understanding of vocational education, a logical point in view of the lack of broadly oriented courses offerings in vocational education during past years at the one institution which provided their preservice educational program. There is a possibility that teachers might perceive any vocational education other than vocational agriculture as competition for their students.

Summary - Conslusions - Implementations

The primary purposes of this study were (1) to determine how successful were teachers in adopting a new educational concept, and (2) to discover whether certain selected factors were associated with the adoption process.

The concept selected for level-of-adoption testing was the new supervised practice concept developed in North Carolina and officially presented to teachers of agriculture at their annual conference in August, 1963. This new concept was considered important because (1) it broadened the spectrum of student learning experiences to include non-farm supervised practice activities as well as farming activities; (2) it placed a greater responsibility upon the school for provision of supervised practice opportunities; and (3) it identified supervised practice as a necessary part of each major learning area of vocational agriculture.

Considering the new concept as one entity, two-thirds of the teachers were in the "evaluation" stages of the adoption process, with half of these favoring trial of the concept. Some 17 per cent had reached one of the top two adoption levels. The conclusion is that teachers were making remarkable progress in adopting a new concept since there had been only seventeen months in which to implement an educational process - a type of change usually requiring many years.

By geographical region, there was no significant difference between the adoption levels reached on the overall concept between coastal and piedmont teachers. However the data indicated that the concept was less widely diffused in the mountains than in other areas.

Teachers were nearly unanimous in adopting the first element of the concept which required broadening the definition of supervised practice to include non-farm agricultural activities. For the second concept element, more than half of the teachers had reached or surpassed the point of favoring trials to provide supervised practice opportunities at their schools.

Least progress was made by the teachers in adopting the third aspect of the concept, which called for supervised practice opportunities to be provided in each major learning area of the vocational agriculture curriculum. Nearly a third of the teachers indicated "unawareness" of this aspect of the concept. Particular emphasis will need to be given to this element of the new concept if implementation is to be achieved.

Since teachers have generally reached the "evaluation" stages in adoption level of the concept, efforts to help teachers make further progress should focus upon those communication techniques which emphasize group discussion rather than mass media. Pilot programs which demonstrate the feasibility of the new concept should be identified or established.

This study included a list of ten variables for which coefficients of correlation with adoption of the new concept were computed. Strangly enough, only one factor (teaching practices) showed sufficient correlation (.509) with teacher level of adoption to be considered significant. This factor was composed of 34 items considered by a state committee to be "good" teaching practices in helping students develop a meaningful supervised practice program.

Although the above moderate correlation between teaching practices and adoption level of concept should not be construed as "cause and effect", it would justify attaching a considerable degree of importance to this list of practices. It would seem highly important to provide opportunities for teachers, in groups, to gain an understanding of this list of teaching practices with the aim of developing modifications and additions for individual teachers.

The fact that there was little correlation between nine of the variables studied and the adoption level reached by teachers indicates that these factors have not been serious barriers to the adoption of the concept to date. These variables were: (1) teacher age, (2) academic degree, (3) years of teaching, (4) size of high school enrollment, (5) students' opportunities for supervised practice at home, and (6-9) four measures of teacher attitude toward vocational education.

It is interesting to note the <u>direction</u> of the "tendencies toward correlation" which the data show. Tendencies toward <u>positive</u> corelation were evidenced between teacher adoption level and (1) increasing age, (2) longer teaching experiences, and (3) overall attitude score. Tendencies toward <u>negative</u> correlation occurred between teacher acceptance of the new concept and the factors of (1) larger schools, (2) better home opportunities for students supervised practice, and (3) attitude score relating specifically to vocational education.

This study has shown evidence of remarkable progress by teachers of agriculture in adopting a new concept. It has identified the elements of the new supervised practice concept which need further implementation. It has indicated that a number of factors have not been significant barriers to teacher adoption of the concept. It has indicated the importance of teaching practices in the area of supervised practice as an orientation point for some teacher education programs. Finally, because the teacher level of adoption was generally identified as the evaluation stage of the diffusion process, it suggests that group discussions and pilot programs will be more appropriate than mass media in fostering further implementation of new concept of supervised practice in vocational agriculture.

Appendix A

Frequency Distribution of Combined Scores of Teacher AAdoption Levels on Three Aspects of New Supervised Practice Concept.

Score Value and Title of Concept Level	Range of Combined Scores	F	Per Cent	Cumulative Frequency F	Cumulative Frequency Per Cent
7-Adopted	21	5	10.6	5	10.6
6-In Trial	18-20	3	6.4	8	17.0
5-Evaluation-Favorable	15-17	15	31.9	23	48.9
4-Evaluation-Unfavorable	12-14	15	31.9	38	80.8
3-Interested Stage	10-11	9	19.2	47	100.0
2-Awareness	----	--	----	--	----
1-Unaware	-----	--	----	--	----
Totals		47	100		

$\bar{X} = 14.6$ S.D. = 3.1